Application No.: 10/783,552   Docket No.: MWS-111

REMARKS

On entry of this response, Applicants have amended claims 1, 5, 8, 14-17, 20, 23, 26 and 32-34 and added claims 37-39 to better claim the invention. No new matter has been added. Claims 1-39 are currently pending in the Application, of which claims 6-7, 12-13, 18-19, 24-25, 30-31 and 36 are withdrawn from further consideration. Among the remaining claims, claims 1, 8, 14, 20, 26 and 32 are independent.

I.   Objection to the Specification

In the Office Action, the Examiner objected to the use of trademarks for processor units in the specification (Office Action, page 3). Applicants have amended the specification so that the trademarks are capitalized and are accompanied by "generic terminology," as requested by the Examiner. No new matter has been added. Applicants respectfully request reconsideration and withdrawal of the above objection to the specification.

In the Office Action, the Examiner had also objected to embedded hyperlinks contained in the specification (Office Action, page 3). Applicants have amended the specification to remove the embedded hyperlinks at page 20, lines 13-15. No new matter has been added. Applicants respectfully request reconsideration and withdrawal of the above objection to the specification.

II.   Claim Rejections by Sauro et al.

In the Office Action, the Examiner rejected claims 1-5, 8-11, 14-17, 20-23, 26-29 and 32-35 under 35 U.S.C. §102(a) as being anticipated by Sauro et al. (Omics: A Journal of integrative Biology, Vol. 7, No. 4, 2003) (hereinafter "Sauro").

Applicants respectfully traverse this rejection.

A.   Claims 1 and 20

Applicants' claim 1 recites:

11

1.   A system for improved modeling of a biological system that comprises a plurality of chemical reactions, the system comprising:
        a modeling component comprising a graphical user interface for accepting user commands and input to construct a model of the biological system, the model being represented in a tabular view and a graphical view;
        a simulation engine accepting as input the constructed model of the biological system and generating as output dynamic behavior of the biological system; and
        an analysis environment in communication with the simulation engine, the analysis environment displaying dynamic behavior of the biological system.

Applicants' claim 20 recites:

20.   A system for improved modeling of a chemical reaction comprising:
        a modeling environment accepting user commands and input for constructing a model of a chemical reaction, the model being represented in a tabular view and a graphical view;
        a simulation engine accepting as input the constructed model of the chemical reaction and generating as output an expected result; and
        an analysis environment in communication with the simulation engine, the analysis environment displaying the expected result.

Applicants respectfully urge that Sauro does not disclose *a modeling component comprising a graphical user interface for accepting user commands and input to construct a model of the biological system, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 1, and *a modeling environment accepting user commands and input for constructing a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 20, because Sauro does not disclose a model represented in a tabular view.

Sauro relates to the Systems Biology Workbench (SBW), a software framework that allows heterogeneous application components to communicate and use each other's capabilities. (Sauro, abstract). Sauro discloses the integration of the SBW into BioSPICE, a toolset for modeling a cellular network functions (Sauro, page 355).

12

In Figures 10 and 11, Sauro discloses a model constructed solely in a graphical view. Sauro only discusses a model in a graphical view. Sauro does not disclose a model represented in a tabular view. Therefore, Sauro does not disclose Applicants' claimed *modeling component comprising a graphical user interface for accepting user commands and input to construct a model of the biological system, the model being represented in a tabular view and a graphical view*, and Applicants' claimed *modeling environment accepting user commands and input for constructing a model of a chemical reaction, the model being represented in a tabular view and a graphical view*.

For at least the reasons set forth above, Applicants urge that Sauro does not anticipate Applicants' claims 1 and 20 under 35 U.S.C. §102(a). Therefore, Applicants respectfully request that the above 35 U.S.C. §102(a) rejection of claims 1 and 20 be withdrawn.

B.   Claims 2-5 and 21-23

Claims 2-5 depend from independent claim 1 and, as such, incorporate all of the features of claim 1. Therefore, for at least the reasons set forth above with respect to claim 1, Applicants respectfully request that the above 35 U.S.C. §102(a) rejection of claims 2-5 be withdrawn.

Claims 21-23 depend from independent claim 20 and, as such, incorporate all of the features of claim 20. Therefore, for at least the reasons set forth above with respect to claim 20, Applicants respectfully request that the above 35 U.S.C. §102(a) rejection of claims 21-23 be withdrawn.

C.   Claims 8 and 26

Applicants' claim 8 recites:

> 8.   A computer-implemented improved method for modeling a biological process comprising a plurality of chemical reactions, the method comprising the steps of:
>   (a)   providing a graphical user interface for accepting user commands and data;
>   (b)   receiving, via the provided user interface, user commands and data;

13

(c)   *constructing, using the received user commands and data, a model of the biological process in a tabular view and a graphical*;

(d)   generating, using the constructed model of the biological process, dynamic behavior of the modeled biological process; and

(e)   displaying the dynamic behavior of the biological process on a display device.

Applicants' claim 26 recites:

26.   A computer-implemented method for integrated modeling, simulation and analysis of chemical reactions, the method comprising the steps of:

(a)   providing a graphical user interface for accepting user commands and data;

(b)   receiving, via the provided user interface, user commands and data;

(c)   *constructing, using the received user commands and data, a model of a chemical reaction, the model being represented in a tabular view and a graphical view*;

(d)   generating, using the constructed model of the chemical reaction, an expected result of the modeled chemical reaction; and

(e)   displaying the expected result.

Applicants respectfully urge that Sauro does not disclose *constructing, using the received user commands and data, a model of the biological process in a tabular view and a graphical*, which is present in claim 8, and *constructing, using the received user commands and data, a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in claim 26. As discussed above with respect to claims 1 and 20, Sauro does not disclose *a model of the biological process in a tabular view and a graphical*, which is present in claim 8, and *a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in claim 26.

For reasons set forth above, Applicants respectfully urge that Sauro does not anticipate Applicants' claims 8 and 26 under 35 U.S.C. §102(a). Therefore, Applicants respectfully request that the above 35 U.S.C. §102(a) rejection of claims 8 and 26 be withdrawn.

14

Application No.: 10/783,552   Docket No.: MWS-111

D.   Claims 9-11 and 27-29

Claims 9-11 depend from independent claim 8 and, as such, incorporate all of the features of claim 8. Therefore, for at least the reasons set forth above with respect to claim 8, Applicants respectfully request that the above 35 U.S.C. §102(a) rejection of claims 9-11 be withdrawn.

Claims 27-29 depend from independent claim 26 and, as such, incorporate all of the features of claim 26. Therefore, for at least the reasons set forth above with respect to claim 26, Applicants respectfully request that the above 35 U.S.C. §102(a) rejection of claims 27-29 be withdrawn.

E.   Claims 14 and 32

Applicants' claim 14 recites:

> 14.   An article of manufacture having embodied thereon computer-readable program means for improved modeling of a biological process comprising a plurality of chemical reactions, the article of manufacture comprising:
>   computer-readable program means for providing a graphical user interface for accepting user commands and data;
>   computer-readable program means for receiving, via the provided user interface, user commands and data;
>   *computer-readable program means for constructing, using the received user commands and data, a model of the biological process, the model being represented in a tabular view and a graphical view;*
>   computer-readable program means for generating, using the constructed model of the biological process, dynamic behavior of the modeled biological process; and
>   computer-readable program means for displaying the dynamic behavior of the biological process.

Applicants' claim 32 recites:

> 32.   An article of manufacture having embodied thereon computer-readable program means for integrated modeling, simulation and analysis of chemical reactions, the article of manufacture comprising:

15

computer-readable program means for providing a
graphical user interface for accepting user commands and data;
computer-readable program means for receiving, via the
provided user interface, user commands and data;
*computer-readable program means for constructing,
using the received user commands and data, a model of a
chemical reaction, the model being represented in a tabular view
and a graphical view;*
computer-readable program means for generating, using
the constructed model of the chemical reaction, an expected result
of the modeled chemical reaction; and
computer-readable program means for displaying the
expected result.

Applicants respectfully urge that Sauro does not disclose at least *computer-readable program means for constructing, using the received user commands and data, a model of the biological process, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 14, and *computer-readable program means for constructing, using the received user commands and data, a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 32. As discussed above with respect to claims 8 and 26, Sauro does not disclose *constructing, using the received user commands and data, a model of the biological process, the model being represented in a tabular view and a graphical view*, which are present in claim 14, and *constructing, using the received user commands and data, a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 32.

For at least the reasons set forth above, Applicants respectfully urge that Sauro does not anticipate Applicants' claims 14 and 32 under 35 U.S.C. §102(a). Therefore, Applicants respectfully request that the above 35 U.S.C. §102(a) rejection of claims 14 and 32 be withdrawn.

16

Application No.: 10/783,552   Docket No.: MWS-111

F.   Claims 15-17 and 33-35

Claims 15-17 depend from independent claim 14 and, as such, incorporate all of the features of claim 14. For at least the reasons set forth above with respect to claim 14, Applicants respectfully request that the above 35 U.S.C. §102(a) rejection of claims 15-17 be withdrawn.

Claims 33-35 depend from independent claim 32 and, as such, incorporate all of the features of claim 32. For at least the reasons set forth above with respect to claim 32, Applicants respectfully request that the above 35 U.S.C. §102(a) rejection of claims 33-35 be withdrawn.

III.   Claim Rejections by Hucka et al.

In the Office Action, the Examiner rejected claims 1-5, 8-11, 14-17, 20-23, 26-29 and 32-35 under 35 U.S.C. §102(b) as being anticipated by Hucka et al. (Pacific Symposium on Biocomputing Vol. 7, p. 450-461, 2002) (hereinafter "Hucka").

Applicants respectfully traverse this rejection.

A.   Claims 1 and 20

Applicants respectfully urge that Hucka does not disclose *a modeling component comprising a graphical user interface for accepting user commands and input to construct a model of the biological system, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 1, and *a modeling environment accepting user commands and input for constructing a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 20, because Hucka does not address a model being represented in a tabular view.

Hucka relates to the ERATO Systems Biology Workbench (SBW), a software framework for allowing heterogeneous application components to communicate and use each other's data and algorithm capabilities. (Hucka, abstract). In Figures 1 and 2, Hucka discloses a model in a graphical view. No where does Hucka disclose a model being represented in a tabular view. Therefore, Hucka does not disclose Applicants' claimed *modeling component comprising a graphical user interface for accepting user commands and input to construct a*

17

Application No.: 10/783,552   Docket No.: MWS-111

model of the biological system, the model being represented in a tabular view and a graphical view, and Applicants' claimed *modeling environment accepting user commands and input for constructing a model of a chemical reaction, the model being represented in a tabular view and a graphical view*.

For at least the reasons set forth above, Applicants urge that Hucka does not anticipate Applicants' claims 1 and 20 under 35 U.S.C. §102(b). Therefore, Applicants respectfully request that the above 35 U.S.C. §102(b) rejection of claims 1 and 20 be withdrawn.

B.   Claims 2-5 and 21-23

Claims 2-5 depend from independent claim 1 and, as such, incorporate all of the features of claim 1. Therefore, for at least the reasons set forth above with respect to claim 1, Applicants respectfully request that the above 35 U.S.C. §102(b) rejection of claims 2-5 be withdrawn.

Claims 21-23 depend from independent claim 20 and, as such, incorporate all of the features of claim 20. Therefore, for at least the reasons set forth above with respect to claim 20, Applicants respectfully request that the above 35 U.S.C. §102(b) rejection of claims 21-23 be withdrawn.

C.   Claims 8 and 26

Applicants respectfully urge that Hucka does not disclose *constructing, using the received user commands and data, a model of the biological process in a tabular view and a graphical*, which is present in claim 8, and *constructing, using the received user commands and data, a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in claim 26. As discussed above with respect to claims 1 and 20, Hucka does not disclose *a model of the biological process in a tabular view and a graphical view*, which is present in claim 8, and *a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in claim 26.

For reasons set forth above, Applicants respectfully urge that Hucka does not anticipate Applicants' claims 8 and 26 under 35 U.S.C. §102(b). Therefore, Applicants respectfully request that the above 35 U.S.C. §102(b) rejection of claims 8 and 26 be withdrawn.

18

Application No.: 10/783,552   Docket No.: MWS-111

D.   Claims 9-11 and 27-29

Claims 9-11 depend from independent claim 8 and, as such, incorporate all of the features of claim 8. Therefore, for at least the reasons set forth above with respect to claim 8, Applicants respectfully request that the above 35 U.S.C. §102(b) rejection of claims 9-11 be withdrawn.

Claims 27-29 depend from independent claim 26 and, as such, incorporate all of the features of claim 26. Therefore, for at least the reasons set forth above with respect to claim 26. Applicants respectfully request that the above 35 U.S.C. §102(b) rejection of claims 27-29 be withdrawn.

E.   Claims 14 and 32

Applicants respectfully urge that Hucka does not disclose at least *computer-readable program means for constructing, using the received user commands and data, a model of the biological process, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 14, and *computer-readable program means for constructing, using the received user commands and data, a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 32. As discussed above with respect to claims 8 and 26, Hucka does not disclose *constructing, using the received user commands and data, a model of the biological process, the model being represented in a tabular view and a graphical view*, which is present in claim 16, and *constructing, using the received user commands and data, a model of a chemical reaction, the model being represented in a tabular view and a graphical view*, which is present in Applicants' claim 32.

For at least the reasons set forth above, Applicants respectfully urge that Hucka does not anticipate Applicants' claims 14 and 32 under 35 U.S.C. §102(b). Therefore, Applicants respectfully request that the above 35 U.S.C. §102(b) rejection of claims 14 and 32 be withdrawn.

19

F. Claims 15-17 and 33-35

Claims 15-17 depend from independent claim 14 and, as such, incorporate all of the features of claim 14. For at least the reasons set forth above with respect to claim 14, Applicants respectfully request that the above 35 U.S.C. §102(b) rejection of claims 15-17 be withdrawn.

Claims 33-35 depend from independent claim 32 and, as such, incorporate all of the features of claim 32. For at least the reasons set forth above with respect to claim 32, Applicants respectfully request that the above 35 U.S.C. §102(b) rejection of claims 33-35 be withdrawn.

IV. Provisional Double Patenting Rejections

In the Office Action, the Examiner provisionally rejected claims 1-5, 8-11, 14-17, 20-23, 26-29 and 32-35 as being unpatentable over claims 1-5, 8-12, 15-18, 26-30, 33-37 and 40-43 of co-pending United States Patent Application Number 10/783,628 (Attorney Docket No. MWS-108). (Office Action, page 6).

Independent claims 1, 8, 14, 20, 26 and 32 include *"the model being represented in a tabular view and a graphical view."* None of the claims of co-pending United States Patent Application Number 10/783,628 include this feature. Therefore, Applicants respectfully submit that claims 1, 8, 14, 20, 26 and 32 are distinct over claims 1-5, 8-12, 15-18, 26-30, 33-37 and 40-43 of co-pending United States Patent Application Number 10/783,628. Applicants respectfully request that the provisional double patenting rejection of claims 1-5, 8-11, 14-17, 20-23, 26-29 and 32-35 be withdrawn.

In the Office Action, the Examiner further provisionally rejected claims 1-5, 8-11, 14-17, 20-23, 26-29 and 32-35 as being unpatentable over claims 1-5, 8-20, 20-27, 30-42 and 44 of co-pending United States Patent Application Number 10/783,624 (Attorney Docket No. MWS-110). (Office Action, page 7).

Independent claims 1, 8, 14, 20, 26 and 32 include *"the model being represented in a tabular view and a graphical view."* None of the claims of co-pending United States Patent Application Number 10/783,624 include this feature. Therefore, Applicants submit that claims 1, 8, 14, 20, 26 and 32 are distinct over claims 1-5, 8-20, 20-27, 30-42 and 44 of co-pending

20

United States Patent Application Number 10/783,628. Applicants respectfully request that the provisional double patenting rejection of claims 1-5, 8-11, 14-17, 20-23, 26-29 and 32-35 be withdrawn.

V.   New Claims

Applicants have added claims 37, 38 and 39 which depend from claims 1, 8 and 14, respectively. Claims 37, 38 and 39 include *"the tabular view and the graphical view of the model comprise annotations to the model that are provided by a user."* Applicants respectfully submit that Sauro and Hucka do not disclose that *the tabular view and the graphical view of the model comprise annotations to the model that are provided by a user*, which is present in claims 37, 38 and 39. For at least the reasons set forth above, Applicants respectfully urge that claims 37-39 are allowable. Therefore, Applicants respectfully request that claims 37-39 be passed to allowance.

21

Application No.: 10/783,552   Docket No.: MWS-111
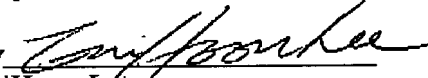
VI.   Conclusion

In light of the above amendments and arguments, Applicants respectfully submit that all of the pending claims are in condition for allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicants' attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. MWS-111. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

Dated: December 7, 2007   Respectfully submitted,

                                               By _____
                                               EuiHoon Lee
                                               Registration No.: L0248
                                               LAHIVE & COCKFIELD, LLP
                                               One Post Office Square
                                               Boston, Massachusetts 02109-2127
                                               (617) 227-7400
                                               (617) 742-4214 (Fax)
                                               Attorney/Agent For Applicant

22